



Chhattisgarh State Electricity Regulatory Commission

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In the matter of revision of determination of tariff for the purchase of electricity generated by biomass power plant in Chhattisgarh by the Distribution licensees in Chhattisgarh w.e.f. 01.04.09 (FY 2009-10 and subsequent years)

Petition No.25 of 2009 (T)

Chhattisgarh Biomass Energy Developers
Association, Raipur

.... Petitioner

V/s

1. Chhattisgarh State Power Distribution Company Ltd.
(Successor company of Chhattisgarh State Electricity
Board i.e. CSEB), Raipur

2. Chhattisgarh Renewable Energy Development
Agency (CREDA), Raipur

.... Respondents

Present: Manoj Dey, Chairman
B.K. Sharma, Member

ORDER

(Passed on 15.04.2010)

The Chhattisgarh Biomass Energy Developers Association (CBEDA, for short) filed a petition requesting for review and redetermination of tariff determined under an order dated 15.01.08, passed by this Commission in petition No. 07/2005 for supply of energy by the biomass-based generating plant to the distribution licensee for the year 2009-10 and subsequent years.

2. Earlier by the order dated 11.11.05, the Commission had passed an order "in the matter of determination of tariff and related dispensation for procurement of power from biomass-based generation projects" in petition No.07/2005. The CBEDA and separately four members of the association filed an appeal before Hon'ble Appellate Tribunal for Electricity (ATE or Tribunal, for short) challenging the Commission's orders and seeking modification in the order in respect of tariff and some other issues. By its order dated 07.09.06, passed in appeal No. 20 of 2006, the Hon'ble ATE set aside some parts of the order of this Commission and

remanded the case back to this Commission with certain observations and directions. Aggrieved by this order of the Hon'ble ATE, the erstwhile Chhattisgarh State Electricity Board (CSEB, for short) filed an appeal before the Hon'ble Supreme Court (No. 12 of 2007). The Hon'ble Supreme Court has passed the order in this appeal on 15.01.07. The order reads as follows:

"As the matter has been remitted to the Commission, we are not inclined to interfere with the impugned order. Accordingly, the civil appeal is dismissed. However, we make it clear that the State would be at liberty to raise all the contentions before the Commission and the Commission shall decide the same, untrammelled by any observations made in the impugned judgment."

It is in the compliance with the order dated 07.09.06 of the Hon'ble ATE and order dated 15.01.07 of the Hon'ble Supreme Court a revised order was passed on 15.01.08 by the Commission in case of petition No. 07/2005.

3. In the above mentioned order dated 15.01.08, the Commission determined the tariff for biomass-based generating plants / projects on following lines.

- (1) Fixed charges from first year to tenth year of operation.
- (2) Energy (Variable) charges.
 - a. For fuel mix of 75:25, energy charges from financial year 2005-06 to 2014-15.
 - b. For fuel mix of 85:15, energy charges from financial year 2007-08 to 2014-15.

4. In this context, under para 8 of the above order dated 15.01.08 (petition No. 07/2005), the Commission had ordered that **"these tariffs will be subject to review after five years from the base year on the request of either a biomass-based generator or the Board."** Regarding O&M expenses, the Commission had observed that these expenses will be subject to review after three years.

5. Subsequently, the Commission notified CSERC (Terms and conditions for determination of generation tariff and related matters for electricity generated by plants based on non-conventional sources of energy) Regulations, 2008 on 22.05.08. These Regulations are applicable to small hydro electricity generating stations and biomass-based electricity generating stations, established in the State. However, under Clause 3(1) of these Regulations it is mentioned that:

"However, these regulations will not apply in case power purchase agreements (PPAs) have already been entered into by any generating company with CSEB and other distribution licensees, prior to the date of notification of these regulations."

The tariff for such plants shall be as per the provision for tariff made in the respective PPAs in terms of this Commission's order dated 15.01.08 passed in petition No. 07 of 2005 in case of biomass-based plants."

6. The petitioner has raised certain other issues also relating to supply of power from their power plants. However, the main contention of the petitioner is for revision of fixed and energy charges. The petitioner has pleaded that due to phenomenal increase in the cost of fuel, it has become financially unviable to supply power to a distribution licensee at the rates specified by the Commission in order dated 15.01.08. The petitioner seeks revision in fixed charges also on account of changes in interest rates, escalation of O&M expenses and other relevant factors. In support of their contention the petitioner submitted certain documents including purchase price of rice-husk by State generating utility i.e. Chhattisgarh State Power Generating Company Ltd. (CSPGCL, for short).

7. The respondent CSPDCL, raised legal issues on admissibility of the petition by CBEDA. CSPDCL submitted that there is no provision under Section 62 and 64 of the Act, 2003 for revision of already determined tariff. CSPDCL opined that if it is an application for determination of tariff then the prescribed procedure has not been followed and hence the application is liable for rejection. CSPDCL is of the view that there is no provision for review of tariff before five years on request of either biomass association or a licensee, as such an escalation of 5% per annum on fuel price has already been considered, so there is no basis for review of the order. The petitioner on other hand pleaded that the price of rice-husk has increased more than three times the rate considered by the Commission while fixing the tariff and their viability is seriously affected because of very high price of rice-husk. We, therefore, were of the view that there is prima facie case for looking into and thus decided to proceed as per provision in section 86 (1) (e) as per which the Commission is required to promote generation of electricity from renewable source of energy, and section 61 (h) of the Act which provides that in determination of tariff, the Commission shall be guided by the "promotion of generation of electricity from renewable source of energy."

8. The CSPDCL opined that modality of determination of item "interest on term loan" and other items related to fixed charges and expenses has not been challenged before Hon'ble ATE and therefore it cannot be challenged now under a petition for review. The respondent CSPDCL thus objected for any revision in fixed cost so also on other issues which were raised in the case by the petitioner.

9. The petitioner through additional submission dated 26.08.09 requested to drop the plea for revisiting the fixed cost for supply of power to distribution utility and requested to issue interim relief on energy charges, as such determination of rate of energy charge based on actual cost of fuel will take time.

10. The points that arise for consideration in the petition are:-

- (1) Whether the tariff for supply of power by biomass-based generators to distribution licensee needs to be re-determined?
- (2) If yes, then what shall be charges.

11. The tariff fixed by the Commission for supply of power by biomass based generating plants to a distribution licensee consists of two parts, fixed charges and energy charges. Since, the petitioner itself has dropped the request for redetermination of fixed charges, at this point of time, we are not going to examine and process the case of redetermination of fixed charges. Regarding redetermination of energy charges, first we have to examine that whether there is any increase or decrease in fuel cost with respect to fuel cost considered in petition No. 07/2005. Secondly, whether the energy charge so determined in the petition is able to recover the cost of fuel for generation.

In the order dated 15.01.08, in case of petition No. 07 of 2005, the landed cost of biomass was considered as Rs 850 per MT for the year 2005-06. This price was specified by the Hon'ble ATE in para No. 16 of order passed in appeal No. 20 of 2006. The order of the Hon'ble Tribunal reads as under:

"Biomass mainly rice-husk could be considered to be available for purchase in the market at Rs. 850/- per M.T. The price of supplementary fuel permissible at 25% of coal of the total fuel quantity be also priced along with 75% rice-husk to obtain the aggregate cost of fuel. An escalation on fuel cost at the rate of 5% p.a. be provided. However, the Commission may also develop a mechanism of fuel cost adjustment (FCA) so that the variation in cost of the fuel could be extended on actual basis, as and when it occurs".

Accordingly, the biomass price was considered as Rs. 850 per MT and coal cost was considered as Rs 1200 per MT for the year 2005-06. The weighted average cost of fuel was considered as Rs. 937 per MT for the financial year 2005-06. An escalation of 5% annum was considered in fuel price and the landed cost of fuel corresponded to Rs. 984 per MT, Rs. 1033 per MT, Rs. 1085 per MT and Rs. 1139 per MT for the financial year 2006-07, 2007-08, 2008-09 and 2009-10 respectively for fuel-mix ratio of 75:25. For fuel-mix of 85:15, the weighted average cost of fuel considered for determining the tariff was Rs. 995 per MT, Rs.1045 per MT and Rs.1097 per MT for the financial year 2007-08, 2008-09 and 2009-10 respectively.

The information submitted by State generating utility (CSPGCL) to CBEDA, reveals that the State utility itself has procured rice-husk for their bagasse based generating plant at Kawardha at Rs. 1465 per MT and Rs. 1615 per MT in the year 2007-08 and 2008-09 respectively. It is to take

note that the rates of biomass has increased at much higher rate than as considered in petition No. 07/2005 for the respective period. It is also pertinent to note that State utility was a vertically integrated utility till 30.12.08.

12. The respondent CSPDCL submitted that there is no justification for any ad hoc proposal submitted by petitioner. The respondent objected on any retrospective application of tariff and suggested to specify VCA formula for changes in fuel price. The CSPDCL submitted that the nodal agency CREDA should institute a mechanism for monitoring fuel cost/ to appoint a committee for prudent checking and verification of fuel price before arriving any conclusion on the case. The nodal agency, CREDA in its reply dated 04.08.09 advocated for revision in energy charges based on increase in cost of biomass, but not proposed or suggested any procurement price of biomass for determination of tariff for biomass based generating plants.

13. CSPDCL in its submission has suggested to specify a VCA formula. This implies that, in principle, CSPDCL also agrees for considering variations in fuel price and pass on the changes or variations in fuel cost. But the CSPDCL wants to pass the variation in a fuel cost through a VCA mechanism. Regarding VCA formula, the Commission realizes that VCA or FCA is really intended to recover the increase or decrease in fuel cost between two successive tariff revisions. The basic nature of VCA or FCA formula is for 'adjustment' i.e. passing on the increase and the decrease as the case may be. The FCA operates on the principle that the actual fuel cost incurred during the specific period has to be adjusted with the fuel cost considered during determination of tariff for that period. In the State of Chhattisgarh there are nearly 17 biomass plants. These plants are located at different places and they procure fuel from different sources and different agencies. The price of the biomass fuel which is actually rice-husk in Chhattisgarh State depends on various components such as agriculture pattern in that region, cost to farmers, cost related to collection, storage, transportation, handling, etc. The fuel procurement and transportation is handled by the highly unorganized sector and the prices are influenced by the various local factors. It has been observed that the procurement prices quoted by the various power developers for similar kind of biomass fuel vary widely. Since, there has not been any system/mechanism to know the real price of biomass, hence, in such a context, the Commission preferred an escalation of 5% in fuel price per annum to be taken into account the normal expected increase in fuel prices.

The thermal generating plant procures fuel for power generation and in most of the cases there is an external agency which supplies fuel to generators. The generators have no control on the fuel price and which may increase or decrease at any time. Keeping this point into consideration, the Act permits to revise the tariff on account of fuel price variation. Section 62(4) of the Electricity Act, 2003 mandates:

62 (4) no tariff or part of any tariff may ordinarily be amended more frequently than once in any financial year, ***except in respect of any changes expressly permitted under the terms of any fuel surcharge formula as may be specified.***

On considering all the facts mentioned above, rice-husk procurement price of CSPGCL for 2007-08 and 2008-09, fuel rates specified by CERC for year 2009-10, submission of CREDA and some of the bill invoices submitted by petitioner there is no doubt that the fuel cost including biomass price has increased and the energy charges specified in petition No 07/2005 may not recover the fuel cost incurred by the power generators.

The Commission is therefore of the view that the increase in fuel cost cannot be overlooked and any generating plant including biomass plant is entitled to recover the fuel cost incurred for generation of power from its generating plant.

14. On request of petitioner and also taking into consideration that the appeal filed by CSPDCL (appeal No. 48 of 2007 and 61 of 2008) before Hon'ble ATE is mainly regarding principle of determination of tariff (project specific or uniform tariff), the Commission passed an interim order on 22.09.09 and fixed the provisional energy (variable) charge for the year 2009-10 at Rs. 2.22 per unit (for fuel-mix of 75:25) and Rs. 2.16 per unit (for fuel-mix of 85:15). For computation of tariff, the Commission considered the landed cost of biomass as Rs. 1615 per MT and the landed cost of coal was considered as Rs. 2100 per MT.

15. The petitioner submitted a rejoinder on 29.10.09 and again reiterated that it would not like to press for other issues raised in petition, but the petitioner stressed to consider the increase in fuel cost. The petitioner referred to the biomass price as specified in CERC (Terms and conditions for tariff determination from renewable energy sources) Regulations, 2009 notified on 16.09.09 for determination of energy charges. The petitioner requested to consider rice-husk price at Rs 1797 per MT as fixed by CERC for "other states" which includes Chhattisgarh also for determination of energy charges for the year 2009-10. The petitioner pleaded that the transportation cost should also be added on the rates specified by CERC for biomass procurement. The petitioner further requested to allow an escalation of 7.5% annually on fuel prices as the escalation of 5% per annum is not sufficient.

16. Before arriving to any conclusion, the Commission decided to initiate a consultation process and give reasonable opportunity to all the affected parties to offer their views on the proposal submitted by the petitioner. Accordingly, the petition of petitioner was uploaded on the Commission's website on 06.02.10 and suggestions / comments were invited up to 02.03.10 from all the concerned parties by issuing a public notice. The suggestions/ comments were also invited from the State Government and the members of the Advisory Committee The list of the

stakeholders who submitted their suggestions/ comments is placed on Annexure-I. On publication of the petition, one of the objector demanded to extend the due date of submission which was not found acceptable as sufficient time was already provided.

Further, the Commission through letter dated 18.03.10 also sought suggestions from the petitioner, respondents CREDA and the State Government on monitoring mechanism of usage of fuel-mix by biomass developers. A hearing was also conducted for this issue on 25.03.10.

17. The second point now for consideration is what shall be the energy charges. The stakeholders in their written submission have suggested to increase the tariff for supply of power by the biomass generating plants to the distribution licensees. Different rates have been suggested from the different stakeholder in this matter. A member of State Advisory Committee suggested to increase the tariff upto maximum of 10 paise per unit from the existing applicable rates of power purchase.

The price of the fuel can be determined either by formulating the trend of the fuel prices quoted by the various biomass-based power developers or it can be determined on the basis of 'equivalent heat value term' of domestic coal.

In the Central Electricity Regulatory Commission (Terms and conditions for tariff determination from renewable energy sources) Regulations, 2009, the biomass fuel price considered for first year of the control period (i.e. FY 2009-10) for different States is as under:

State Biomass Price (Rs./MT)

Andhra Pradesh	-	1301
Haryana	-	2168
Maharashtra	-	1801
Madhya Pradesh	-	1299
Punjab	-	2092
Rajasthan	-	1822
Tamil Nadu	-	1823
Uttar Pradesh	-	1518
Other States	-	1797

The price for biomass fuel for Chhattisgarh State has not been specified separately and it may come under the rates specified for the "other States". The CBEDA in its submission have requested to consider the rate of Rs.1797/MT excluding transportation charges as cost of fuel in determination of tariff for 2009-10.

It has been observed by CERC and the some other SERC's also, that the prices quoted by the various agencies for similar kind of biomass fuel vary widely. The CERC has also specified the price of biomass in equivalent heat terms of coal. For other States which includes Chhattisgarh also, CERC has specified GCV of biomass as 3467 kcal/kg and biomass price for 2009-10 has been considered as Rs.1797 per MT. The CERC has also passed an order in petition No. 284 of 2009 (Suomotu) "in the matter of determination of generic levelled generation tariff under Regulations 8 of the CERC (Terms and conditions for tariff determination from renewable energy sources) Regulations, 2009. In this order the CERC has considered landed cost of fuel as Rs.1797 per MT. The fuel related parameters considered by CERC for computation of energy charge are as under:

- (a) Heat rate – 3800 kcal/kwh
- (b) GCV of biomass – 3467 kcal/kg
- (c) Base price for 2009-10 - Rs.1797 per MT

The Central Commission has considered equivalent heat value approach for determining fuel cost and energy charge. The explanatory memorandum issued by CERC states:

"most of the biomass power projects use variety of biomass fuels with differing characteristics and calorific values, used in varying proportion. Hence, it will be appropriate to determine the price of fuel in equivalent heat terms".

The statements of reason issued by the Central Commission says that the biomass prices derived in Regulations has been escalated based on fuel price indexation mechanism stipulated under the Regulation to derive fuel prices during first year of the control period (i.e. for FY 2009-10).

18. The clause 9.5 of statement of objects and reasons on CERC (Terms and conditions for tariff determination from renewable energy sources) Regulations, 2009 read as *"as regards usage of fossil fuel, this provision should not be viewed as a right to use the fossil fuel. Such provision has been provided to take care of contingencies arising due to non-availability of sufficient biomass in certain months of year to address seasonality aspects. MNRE had revised the limit for maximum usage of coal from 25% to 15% for the biomass projects which are availing capital subsidy, and accordingly, it has been factored in the draft Regulations. Further, for sake of operational simplicity and to facilitate monitoring mechanism, the 15% limit has been stipulated in terms of quantity rather than in terms of heat value (kCal) as demanded by some of the stakeholders."*

19. The petitioner has prayed to revise the energy charges for the year 2009-10 i.e. to be effective from 01.04.09. The CSPDCL in its submission has objected on any retrospective application of tariff. We have observed

that the petition was filed on 28.04.09 with request for revision of tariff w.e.f. 01.04.09. The State generating company during 2008-09 procured biomass at the rate of Rs.1615/MT and the price of biomass is fixed as Rs. 1797/MT by CERC for the year 2009-10. We, thus, feel that there is sufficient ground to revise the tariff w.e.f. 01.04.09. Hence, we feel it justify to revise the tariff for the year 2009-10 w.e.f. 01.04.09 on the basis of price of biomass as Rs.1797/MT as decided by the CERC and as demanded by the petitioner. Since, this price is landed cost hence no separate transportation charges has been taken into account. It is to be noted that in the Regulations for terms and conditions of determination of tariff, the power purchase cost of a distribution licensee is considered as an uncontrollable item. Any variation in the cost of power purchase of a distribution licensee, on account of changes in fuel price of any generator supplying power to distribution licensee, would be passed on during truing up. So a distribution licensee is able to recover the increased cost of power purchase, if any, through its retail tariff during truing up of ARR of 2009-10.

20. The CERC as explained in its explanatory memorandum for tariff norms for renewable energy projects has arrived the cost of biomass fuel on the basis of "equivalent heat value term" based on cost of domestic coal. Thus, equivalent heat value in rupee per calorie both for coal and biomass fuel remains the same. Thus, cost of energy for both type of power plant of fossil fuel ratio 85:15 and 75:25 will remain same. Since, we have adopted rate of biomass fuel as Rs.1797/MT fixed by CERC on equivalent heat value principal, thus, the rate of energy charges shown below shall be applicable to all biomass-based generating plant in Chhattisgarh irrespective of their permissible fossil fuel ratio. This Commission now decides that the energy charges determined by the Central Commission for the year 2009-10, which is based on the parameters mentioned above shall be applicable in the State for procurement of power from biomass based generating plant. The CERC has considered 5% escalation on fuel cost and the same can be considered in the State though the CBEDA has demanded 7.5% escalation on fuel charge but no basis has been submitted, hence not considered. Accordingly, the year-wise energy charges shall be as follows:

Energy charge per unit		
FY		
2009-10	2.19	
2010-11	2.30	
2011-12	2.41	
2012-13	2.53	
2013-14	2.66	

2014-15	2.79
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However, as directed by the Hon'ble Tribunal, the distribution licensees (CSDPCL, JSPL and BSP) and any biomass-based generator will be entitled to apply for fixing of tariff for a specific biomass generating station in case they feel that the impugned tariff is more / less than what can legitimately be determined under the Act and the Regulation.

21. The Commission agrees with the view of CSPDCL that there should be a proper fuel usage monitoring mechanism. In our order dated 15.01.08 of petition No. 07/2005, we have already framed a monitoring mechanism for use of fossil fuel by biomass based generating plants as per which CREDA who is the State nodal agency for renewable energy sources was given the task. Now, the CERC in their terms and conditions for tariff determination from renewable energy sources Regulations, 2009 have introduced a different monitoring mechanism for use of fossil fuel. Considering the importance of this issue the Commission proposed adoption of this monitoring mechanism and separately conducted a hearing on this subject. The monitoring mechanism specified in CERC, Regulations was sent to petitioner and respondents to offer their views in this issue. Only the petitioner has submitted its views. The CSPDCL opined that they don't have any objection if the proposed monitoring mechanism is introduced. The State Government and the nodal agency, CREDA did not comment on the proposed monitoring mechanism. Taking an overall view the monitoring mechanism is finalized as under:

Monitoring Mechanism for the use of fossil fuel

- (1) The Project developer shall furnish a monthly fuel usage statement and monthly fuel procurement statement to the beneficiary i.e. distribution licensee procuring power (for the purpose of monitoring the fossil and non-fossil fuel consumption), along with the monthly energy bill for verification and payment. The statement shall cover details such as:-
 - a) Opening fuel stock quantity (in tonnes), for each type of fuel.
 - b) Receipt of fuel quantity (in tonnes) at the power plant site for each type of fuel during the month.
 - c) Quantity of fuel (in tonnes) for each fuel type (biomass fuels and fossil fuels) consumed during the month for power generation purposes,
 - d) Closing fuel stock quantity (in tonnes) for each fuel type (biomass fuels and fossil fuels) available at the power plant site at the end of the month.
 - e) Cumulative quantity (in tonnes) of each fuel type (biomass and fossil fuel) procured till the end of that month during the financial year,

- f) Cumulative quantity (in tonnes) for each fuel type (biomass and fossil fuel) consumed till end of that month during the financial year)
- g) Actual (gross and net) energy generation (denominated in lakhs of units) during the month,
- h) Cumulative actual (gross and net) energy generation (denominated in lakhs of units) until the end of that month during the financial year,

Further, the aforesaid information is to be submitted by project developer quarterly duly certified by the Chartered Accountants alongwith the energy bills for the month of June, September, December and March. This has to start implementing for payment of energy bill for the month of March' 2010 payable in April' 2010.

22. We, therefore, decide that the energy charge shown in table of para 20 of this order shall be applicable for biomass-based generators (both having maximum fossil fuel ratio as 75:25 and 85:15) for supply of energy to distribution company w.e.f. 01.04.09, and shall be applicable for the financial year mentioned against each. The order of this Commission passed on 15.01.08 in petitioner No. 7 of 2005 in this case shall stand modified to the extent of this order.

We order accordingly.

**Sd/-
Member**

**Sd/-
Chairman**

Annexure-I

List of persons / company who have submitted their written comments/suggestions

Sl. No.	Name of the Company & address
1.	Shri Suresh Kumar, Bilha, Bilaspur
2.	Shri Hari Shankar Shukla, Sakri, Bilaspur
3.	Shri Shailesh Thakur, Vaisali Nagar, Bhatapara
4.	Shri Gopal Mukherjee, Member, SAC, 44, Surajmukhi Rajkishore Nagar, Bilaspur
5.	Shri S.K.Shukla, Director, CREDA, Raipur
6.	Shri P.N. Singh, General Secretary, Chhattisgarh Vidhyut Mandal Abhiyanta Sangh, Raipur
7.	Chhattisgarh Biomass Energy Developers Association, Raipur